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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,408	03/31/2004	James R. Lattner	2002B139/2	5396

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ExxonMobil Chemical Company
Law Technology
P.O. Box 2149
Baytown, TX 77522-2149

EXAMINER

LEUNG, JENNIFER A

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/814,408	LATTNER, JAMES R.	
	Examiner	Art Unit	
	Jennifer A. Leung	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24 and 30-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1-27-06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment submitted on January 27, 2006 has been received and carefully considered. Claims 1-23 and 25-29 are cancelled. Claims 24 and 30-32 are under examination.

Drawings

2. The replacement drawing filed on January 27, 2006 is objected to as failing to comply with 37 CFR 1.84(p)(5) because it does not include the following reference sign(s) mentioned in the description: **10, 22, 30 or 60** (see specification sections [0113] and [0116]).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Terminal Disclaimer

3. The terminal disclaimer filed on January 27, 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Application Serial No. 10/325,523 has been reviewed and is accepted (in view of newly submitted revision to the Power of Attorney, filed April 7, 2006). The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 24 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirsch et al. (US 2,892,773) in view of Hofferber et al. (US 4,092,722).

Regarding claim 24, Hirsch et al. (FIG. 1) discloses an apparatus comprising:

a feed line (residual hydrocarbon charge lines 30) communicating with a riser reactor feed inlet (inlet lines 12) to a riser reactor (reactor 10a, 10b), the riser reactor further comprising a riser reactor outlet (outlet lines 14) for riser reactor effluent;

a preheater (not shown) through which the feed line 30 inherently passes (i.e., "... the reactors 10a and 10b are maintained at a temperature... by *suitable preheating of the residual oil charged to the unit...*" column 5, lines 31-35);

a disengaging vessel (hopper 16) receiving the riser reactor effluent from lines 14, the disengaging vessel 16 comprising a disengaging vessel outlet (via line 20) at an upper portion of the vessel for removing vapor;

a catalyst circulation line 26, 26a, 26b running downward from a lower portion of the disengaging vessel 16 to a lower portion of the riser reactor 10a,10b;

a regenerator 40 comprising a lower inlet (line 42) for introducing a regeneration medium, an upper outlet (line 44) for regenerator flue gas, said regenerator 40 further comprising a first catalyst transport line (standpipe 38, communicating with line 59) running

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downwardly from a lower portion of the disengaging vessel 16 to a regenerator catalyst inlet, and a second catalyst transport line (well 53) extending downwardly from a regenerated catalyst outlet and intersecting with a lift gas riser (defined by transfer line 58); said lift gas riser 58 having an upper outlet at the disengaging vessel 16 and a lower lift gas inlet (line 64); and
a regenerator catalyst circulating control valve 60 controlling the passage of catalyst from the regenerated catalyst outlet of regenerator 40 to said lift gas riser 58.

Although Hirsch et al. is silent as to the preheater being of the type that uses a flowing fluid heating medium for at least partially vaporizing the feed, it would have been obvious for one of ordinary skill in the art at the time the invention was made to select such a preheater for vaporizing the feed in the apparatus of Hirsch et al., on the basis of suitability for the intended use, because the Examiner takes Official Notice that the use of preheaters having a flowing fluid heating medium (e.g., steam) for vaporizing feeds is well known in the art of heat exchange, and it has been held that the substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

Hirsch et al. is silent as to said regenerator catalyst circulation control valve 60 being manipulated as a function of riser reactor temperature.

Hofferber et al. (FIG. 1; column 4, line 30 to column 5, line 65) teaches an apparatus comprising a riser reactor (riser pipe 3, with a disengaging vessel portion 1) in communication with a regenerator (labeled as CATALYST REGENERATOR) via a catalyst transport line 8 comprising a regenerator catalyst circulating control valve 9 for controlling the passage of

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catalyst from the regenerator to the riser reactor 3 as a function of riser reactor temperature, as measured by a temperature sensor (thermocouple 13).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to configure the apparatus of Hirsch et al. such that the regenerator catalyst circulation control valve 60 was further manipulated as a function of riser reactor temperature, because controlling the flow of regenerated catalyst from the regenerator to the riser reactor according to a measured temperature of the riser reactor allows for the automatic maintenance of an approximately constant temperature both in the riser and in the reactor vessel or regenerator bed, as taught by Hofferber et al. (column 2, lines 20-33).

Regarding claims 30-32, as seen in FIG. 1 of Hofferber, temperature sensor 13 is located along a portion of the riser reactor 3, which appears to be at a point lying within the range of from about 30% to about 40% of the riser reactor length, as measured from the feed inlet 4 of the riser reactor 3, or at a location between about 20% to about 80% the axial length of the reactor 3. Although these range values are not specifically stated in the disclosure, it would have been obvious for one of ordinary skill in the art at the time the invention was made to select a suitable location for the temperature sensor in the modified apparatus of Hirsch et al., on the basis of suitability for the intended use, because the shifting of location of parts is obvious, and it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, *In re Aller*, 105 USPQ 233.

Response to Arguments

5. Applicant's arguments with respect to the rejection of claims 24 and 30-32 under 35 U.S.C. 103(a) as obvious over Lattner et al. (US 6,023,005) in view of Hofferber et al. (US

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4,092,722) have been considered, but they are moot in view of the amendment to the claims (e.g., the newly added limitation of “said lift gas riser having an upper outlet at said disengaging vessel” in claim 24, line 20 is not disclosed nor suggested by Lattner et al.).

6. Applicant's arguments with respect to the provisional rejection of claims 24 and 30-32 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 45-57 of copending Application No. 10/325,523 in view of Hofferber et al. (US 4,092,722) have been considered. The rejection has been withdrawn in view of the Terminal Disclaimer filed on January 27, 2006 and the revised Power of Attorney filed on April 7, 2006.

7. Applicant's arguments with respect to the rejection of claims 24 and 30-32 under 35 U.S.C. 103(a) as being unpatentable over Hirsch et al. (US 2,892,773) in view of Hofferber et al. (US 4,092,722) have been fully considered but they are not persuasive.

On page 8 (first and second paragraphs) of the response, Applicants argue,

“... Hirsch does not have a regenerator catalyst circulation control valve capable of being manipulated as a function of riser reactor temperature. As already noted, the Hofferber apparatus includes a control valve that is situated to control flow from the regenerator to the reactor riser 3, and the reactor riser in Hofferber goes directly to the reactor unit itself. This arrangement differs from Applicants' lift gas riser, which has an upper outlet at the disengaging vessel. Thus, Hofferber could only reasonably suggest coupling his control system directly to Hirsch's one or more riser reactors, which would be a completely different structure from the claimed invention.”

The Examiner respectfully disagrees and maintains her rejection. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one

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or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, the secondary reference to Hofferber was cited to evidence the conventionality of providing a control scheme, e.g. for a regenerated catalyst control valve, that is based on a function of riser temperature. Such control scheme, for instance, would allow for the automatic maintenance of an approximately constant temperature both in the riser and in the reactor vessel or regenerator bed, as taught by Hofferber et al. (column 2, lines 20-33). The Examiner did not intend for the specific constructs of the apparatus of Hofferber to be wholly incorporated in the apparatus of Hirsch.

In any event, claim 24 recites “said regenerator catalyst circulation control valve *being manipulated as a function of riser reactor temperature.*” Because no further control elements are claimed in conjunction with the circulation control valve, the manipulation of the valve as a function of riser reactor temperature is merely a recitation of process or intended use, which provides no further structure to the apparatus claim. To illustrate, an apparatus simply comprising a control valve located on the regenerated catalyst passage could meet the claim because a human operator could determine the temperature of the riser reactor by measuring its temperature with a thermocouple, manually, and subsequently operate the control valve, manually, based on the temperature determination. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

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Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

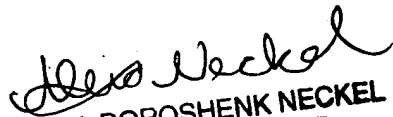
* * *

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is (571) 272-1449. The examiner can normally be reached on 9:30 am - 5:30 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer A. Leung
April 14, 2006 


ALEXA DOROSHENK NECKEL
PRIMARY EXAMINER